

Center for Value Added Seed Technology

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**The center is involved in cross-breeding research to develop drought resistant turf grasses.
The center also seeks to develop vigorous hybrids of grain product that exhibit
apomixis (asexual reproduction).**

Background

Established in 1991 to produce value-added crops: (i) drought resistant turf grasses for roadways, lawns, golf courses (require 30-40% less water), (ii) forage grasses with superior yield under arid land conditions, and (iii) hybrid vigor in wheat using molecular biology.

Technology Development Progress

- Conventional plant breeding of forage and turf grasses collected worldwide.
- Molecular genetic markers to move genes of interest from weedy grass species into commercial forage and cereal crops.
- Plant tissue culture to clone unique agricultural, horticultural and forestry plants.
- Microbiology and plant physiology to improve methods for the genetic engineering of major crops.
- Procedures to mass clone superior crop and forestry plants and to genetically engineer cereals, cotton, and other crops.



Screening grasses in saline solution...part of breeding program to develop improved grasses for resistance to high salinity that is found along roadsides in Utah

Highlights and Accomplishments

Plant breeding: A new forage grass, crested wheatgrass variety CD-2, has been released and licensed to 6 companies.

Turfgrass seed was selected for color, vegetative spread, leaf width, turf quality, response to drought and plant pests. It has been produced and is being prepared for release as a new cultivar.

Molecular genetic marker technology: The DNA based genetic markers for apomixis (asexual seed formation) genes are being used to tag apomictic Australian wheat grasses.

Plant tissue culture: proprietary tissue culture media and procedures are being refined and show promise for use in the mass cloning and genetic engineering of agronomic, horticultural, and forestry plants.

Turf and forage grass cultivars released by CFAST are being protected by the Plant Variety Protection Act. A significant number of companies as well as the United States Golf Association have expressed interest.

Bioreactors: CFAST is collaborating with federal and private labs to develop bioreactors for the cloning of crops and forestry trees and to improve genetic engineering procedures.

Summary Data:

Current

1996-97 Award	\$70,000
Matching Funds	\$104,972
Plant Variety Protection	1
License Agreements	0
Spin-off Companies	0
Companies Assisted	0
Industry Jobs	0
Center Jobs	12

Cumulative

Awards	\$450,000
Matching Funds	\$928,370
Plant Variety Protection	4
License Agreements	6
Spin-off Companies	0